

 South Coast Air Quality Management District <i>Engineering & Compliance</i> APPLICATION PROCESSING AND CALCULATIONS	APPLICATION NO. See Table 1	DATE 02/24/2015	PAGE 1 of 35
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PERMIT TO CONSTRUCT

COMPANY NAME: PARAMOUNT PETROLEUM CORP
 ID No. 800183

MAILING ADDRESS: 14700 Downey Ave
 Paramount, CA 90723

EQUIPMENT LOCATION: 14700 Downey Ave
 Paramount, CA 90723

CONTACT PERSON: Kathryn Gleeson
 (562) 748-4613

PROJECT SUMMARY

Paramount Petroleum Corporation (Paramount) is proposing to modify the existing Amine Fuel Gas Treating System and Asphalt Blowing Plant Incinerator H-907 as part of the Paramount’s Renewable Fuels project (please refer to A/N 555017 for the Renewable Fuels project permits- to-construct). Further engineering analysis has determined that during Renewable Fuels operation, routing the acid gas from the Amine Regeneration Unit to the H-907 Incinerator would be more practical than using the Caustic Scrubber as specified in A/N 555013.

The Renewable Fuels Project is considered to be a project under CEQA. The City of Paramount is the designated Lead Agency for the proposed project and is responsible for the project’s environmental review. The Mitigated Negative Declaration and Initial Study conducted by the City of Paramount determined that the proposed project is not expected to have significant adverse environmental impacts, with the implementation of the recommended mitigation measures. Paramount will provide the District a copy of the signed Notice of Determination with Addendum due to the modification of the project prior to the issuance of these permits.

EQUIPMENT DESCRIPTION

Additions to the Facility Permit are noted in underlines and deletions are noted in ~~strikeouts~~.

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 6: TREATING/STRIPPING					
System 7: AMINE REGENERATION UNIT				S13.2, S15.5, <u>S31.x</u> , S56.1	
COLUMN, W-208, AMINE REGENERATOR HEIGHT: 49 FT; DIAMETER: 7 FT	D134				



Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
A/N: 555014 572516					
KNOCK OUT POT, D-206, AMINE REGENERATOR COLUMN OVERHEAD ACI D GAS, HEIGHT: 18 FT 6 IN; DIAMETER: 5 FT A/N: 555014 572516	D139	C531			D90.x
TANK, SURGE, D-213, LEAN AMINE, LENGTH: 20 FT; DIAMETER: 8 FT 6 IN A/N: 555014 572516	D142	C175			E336.1
SUMP, AMINE DRAIN SUMP, WIDTH: 5 FT; LENGTH: 5 FT; DEPTH: 10 FT A/N: 555014 572516	D143				
TOWER, W-204, WASH WATER, HEIGHT: 29 FT 10 IN; DIAMETER: 2 FT 8 IN A/N: 555014 572516	D834				
LEAN AMINE FILTER, D-209, HEIGHT: 3 FT 10 IN; DIAMETER: 1 FT 2 IN A/N: 555014 572516	D835				
LEAN AMINE FILTER, D-210, HEIGHT: 3 FT 5 IN; DIAMETER: 1 FT 8 IN A/N: 555014 572516	D836				
FILTER, D-220, CARBON, HEIGHT: 7 FT; DIAMETER: 4 FT A/N: 555014 572516	D837				
FUGITIVE EMISSIONS, MISCELLANEOUS A/N: 555014 572516	D657				H23.2
Process 15: AIR POLLUTION CONTROL					
System 3: INCINERATION SYSTEM SERVING ASPHALT BLOWING PLANT					
INCINERATOR, H-907, NATURAL GAS, HEAT RECOVERY SECTION, 30 MMBTU/HR WITH A/N: 557213 572517 BURNER, NORTH AMERICAN, MODEL NO.4131D	C531	C81 C86 C88 C90 D353 C566 C575 C576 C577 D579 C596 C597 C598 C599 C761 C763 C769 D139	NOX: MAJOR SOURCE SOX: MAJOR SOURCE	CO: 2000 PPMV (5) [RULE 407, 4-2-1982; PM: (9) RULE 404, 2-7-1986]; PM: 0.1 GRAINS/SCF (5) RULE 409, 8-7-1981]; SO2: 20 PPMV (8) [40CFR60 SUBPART J, 6-24-2008]	C1.23 C8.1 D28.4, D82.3 D323.1 E193.x H23.4



Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
DRUM, D-932, SURGE, HOT OIL, <u>COMMON TO ASPHALT PRODUCTION HEATERS</u> HEIGHT: 7 FT 5 IN; DIAMETER: 5 FT 6 A/N: 447466	D901				E336.13
System 4: SOX SCRUBBING SYSTEM SERVING ASPHALT BLOWING PLANT					S13.2
SCRUBBER, PACKED BED, W-900, AMEREX TOWER, STAINLESS STEEL, HEIGHT: 23 FT; DIAMETER: 8 FT A/N: 353057 535708 BURNER, NORTH AMERICAN, MODEL NO.4131D	C566	C531 D569			C8.2
<u>KNOCK OUT POT, D-931,</u> <u>HEIGHT: 12 FT 1 IN;</u> <u>DIAMETER: 7 FT 3/8 IN</u> A/N: 353057 535708	<u>DXXX</u>	<u>C531</u>			
HEATER, H-908, SCRUBBER OUTLET GAS REHEAT, NATURAL GAS, FORCED DRAFT, WITH DUCT BURNER, 8 MMBTU/HR WITH A/N: 353074	D569	C566	NOX: LARGE SOURCE	CO: 400 PPMV (5A) [RULE 1146, 11-17-2000; CO: 2000 PPMV (5) [RULE 407, 4-2-1982; PM: (9) RULE 404, 2-7-1986]; PM: 0.1 GRAINS/SCF (5) RULE 409, 8-7-1981]; NOX: 30 PPMV (4) RULE 1303(a)(1)- BACT, 5-10-1996;] RULE 1303(a)(1)- BACT, 12-6-2002]	C1.6

CONDITIONS

S13.2 All devices under this system are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1123

[Rule 1123, 12-7-1990]

[Systems subject to this condition: Process 1, System 1, 2, 4, 5, 6; Process 2, System 1, 3, 4, 6, 7; Process 3, System 1; Process 6, System 1, 2, 4, 5, 6, 7; Process 13, System 6;

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Process 15, System 1, 2, 4; Process 16, System 1, 2]

S15.5 The vent gases from all affected devices of this process/system shall be vented as follows:

All acid gas shall be directed to the Sulfur Recovery Unit (Process 7, System 1). However, all acid gas may be directed to the Caustic Storage and Scrubbing System (Process 6, System 6) in lieu of the Sulfur Recovery Unit during start up, shut down, malfunction of the Sulfur Recovery Unit, ~~or~~. During normal operation of the Renewable Fuels units, acid gas shall be directed to the Caustic Storage and Scrubbing System or to the Incineration System serving the Asphalt Blowing Plant.

This process/system shall not be operated unless the Sulfur Recovery Unit and/or the Caustic Storage and Scrubbing System and/or Incineration System serving the Asphalt Blowing Plant is in full use and has a valid permit to receive vent gases from this system.

[**Rule 1303(a)(1)-BACT, 5-10-1996**; Rule 1303(a)(1)-BACT, 12-6-2002; **Rule 1303(b)(2)-Offset, 5-10-1996**; Rule 1303(b)(2)-Offset, 12-6-2002]
 [Systems subject to this condition: Process 6, System 2, 7]

S31.x The following BACT requirements shall apply to VOC service fugitive components associated with the devices that are covered by application number(s) 572516 (Amine Regeneration Unit):

All open-ended lines shall be equipped with cap, blind flange, plug, or a second valve.

All pressure relief valves shall be connected to a closed system.

All new light liquid pumps shall utilize double seals.

All compressors shall be equipped with a seal system with a higher pressure barrier fluid.

All new valves in VOC service, except those specifically exempted by Rule 1173, and those in heavy liquid service as defined in Rule 1173, shall be bellows seal valves, except as approved by the District, in the following applications: heavy liquid service, control valve, instrument piping/tubing, applications requiring torsional valve stem motion, applications where valve failure could pose safety hazard, retrofits/special applications with space limitations, and valves not commercially available.

All new valves and major components in VOC service as defined by Rule 1173, except those specifically exempted by Rule 1173 and those in heavy liquid service as defined in Rule 1173, shall be distinctly identified from other components through their tag numbers (e.g., numbers ending in the letter "N"), and shall be noted in the records.

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All new components in VOC service as defined in Rule 1173, except valves and flanges, shall be inspected quarterly using EPA Reference Method 21. All new valves and flanges in VOC service, except those specifically exempted by Rule 1173, shall be inspected monthly using EPA Reference Method 21.

Inaccessible components, as defined in Rule 1173, shall be inspected annually, with the first inspection to occur within 90 days of the initiation of Renewable Fuels sour gases being directed to the incinerator.

All components in VOC service except for pumps, compressors and drains, a leak greater than 100 ppm but less than 1,000 ppm measured as methane above background as measured using EPA Method 21, shall be repaired within 14 days of detection. Components shall be defined as any valve, fitting, flange, connector pressure relief device, diaphragm, hatch, sight-glass, and meter, which are not exempted by Rule 1173. A leak greater than 1,000 ppm shall be repaired according to Rule 1173.

All pumps, compressors and drains, a leak greater than 100 ppm but less than 1,000 ppm measured as methane above background as measured using EPA Method 21, shall be repaired within 14 days of detection. A leak greater than 1,000 ppm shall be repaired according to Rule 1173.

If 98.0 percent or greater of the new (non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 100 ppmv for two consecutive months, then the operator may change to a quarterly inspection program with the approval of the District.

The operator shall revert from quarterly to monthly inspection program if less than 98.0 percent of the new (non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate of less than 100 ppmv.

The operator shall keep records of the monthly inspection (quarterly where applicable), subsequent repair, and reinspection, in a manner approved by the District. Records shall be kept and maintained for at least five years, and shall be made available to Executive Officer or his authorized representative upon request.

[Rule 1303(a)(1)-BACT, 5-10-1996; Rule 1303(a)(1)-BACT, 12-6-2002; Rule 1303(b)(2)-Offset, 5-10-1996; Rule 1303(b)(2)-Offset, 12-6-2002]
[Systems subject to this condition: Process 6, System 7]

S56.1

Vent gases from all affected devices of this process/system shall be directed to a gas recovery system, except for the venting of gases from equipment specifically identified in a permit condition, and for the following events for which vent gases may be directed to a flare:

1. Vent gases resulting from an Emergency as defined in Rule 1118;

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2. Vent gases resulting from Planned Shutdowns, Startups, and/or Turnarounds as defined in Rule 1118, provided that the owner/operator follows the applicable options and any associated limitations to reduce flaring that were identified, evaluated and most recently submitted by the owner/operator to the Executive Officer pursuant to Rule 1118, or any other option(s) which reduces flaring for such planned events; and
3. Vent gases due to and resulting from an Essential Operational Need, as defined in Rule 1118.

The evaluation of options to reduce flaring during Planned Shutdowns, Startups and/or Turnarounds shall be updated annually to reflect any revisions, and submitted to the Executive Officer by March 31st.

This process/system shall not be operated unless its designated flare(s) are in full use and have valid permits to receive vent gases from this process/system.

[Rule 1303(a)(1)-BACT, 5-10-1996; Rule 1303(a)(1)-BACT, 12-6-2002; Rule 1303(b)(2)-Offset, 5-10-1996; Rule 1303(b)(2)-Offset, 12-6-2002]

[Systems subject to this condition: Process 1, System 1, 2, 4, 5, 6; Process 2, System 1, 3, 4, 6, 7 & 4; Process 3, System 1; Process 6, System 1, 2, 4, 5, 6 & 7; Process 7, System 2; Process 10, System 3; Process 13, System 6; Process 15, System 1; Process 16, System 1, 2; Process 18, System 1 & 2]

C1.6 The operator shall limit the fuel usage to no more than 182,000 cubic feet per day.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition: D569]

C1.23 The operator shall limit the firing rate to no more than 30 MMBtu per hour.

The operator shall also limit the firing rate to no more than 18 MMBtu/hr on an average daily basis.

For the purpose of this condition, firing rate shall be defined as the energy or heat input of the natural gas to the equipment combustion chamber based on the higher heating value (HHV) of the natural gas.

To comply with this condition, the operator shall install and maintain a flow meter to accurately indicate the natural gas usage of the incinerator.

The operator shall also install and maintain a device to continuously record the parameter being measured.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition: C531]

C8.1 The operator shall use this equipment in such a manner that the temperature being monitored, as indicated below, is not less than 1400 deg F.

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To comply with this condition, the operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature in the firebox or in the ductwork immediately downstream from the firebox.

The measuring device or gauge shall be accurate to within plus or minus 50 degree F. It shall be calibrated once every 12 months.

The operator shall also install and maintain a device to continuously record the parameter being measured.

[Rule 1303(a)(1)-BACT, 5-10-1996; Rule 1303(a)(1)-BACT, 12-6-2002; Rule 3004(a)(4)-Periodic Monitoring, Rule 470, 5-7-1976]

[Devices subject to this condition: C531]

D28.4 The operator shall conduct source test(s) in accordance with the following specifications:

The test shall be conducted to determine the CO, PM, and ROG emissions at the outlet.

The test shall be conducted at least once every three years.

[Rule 3004(a)(4)-Periodic Monitoring, 12-12-1997; Rule 404, 2-7-1986; Rule 407, 4-2-1982; Rule 409, 8-7-1981]

[Devices subject to this condition: C531]

D82.3 The operator shall install and maintain a CEMS to measure the following parameter:

SOX concentration in ppmv

Concentration shall be corrected to zero percent excess air on a dry basis

Oxygen concentration in percent volume

The CEMS shall be installed in accordance with the requirements of 40CFR60 Subpart J.

[40CFR60 Subpart J, 9-12-2012]

[Devices subject to this condition: C531]

D90.x The operator shall sample and analyze VOC content at the outlet of the amine regenerator within 180 days of initial startup of the Renewable Fuels operation.

The test shall be conducted according to the test methods specified in Rule 1173(j)(2).

This condition shall be used to 1) determine if this equipment qualifies from Rule 1173 exemption pursuant to Rule 1173(l)(1)(D); and 2) ensure that the VOC content at the outlet of the Amine Regenerator while running Renewable Fuels

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will not exceed 1% by weight VOC for offset purposes.

[Rule 1173, 2-6-2009; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition: D139]

D323.1

The operator shall conduct an inspection for visible emissions from all stacks and other emission points of this equipment whenever there is a public complaint of visible emissions, whenever visible emissions are observed, and on a bi-weekly basis whenever fuel oil is burned. The routine bi-weekly inspection shall be conducted while the equipment is in operation and during daylight hours.

If any visible emissions (not including condensed water vapor) are detected that last more than three minutes in any one hour, the operator shall verify and certify within 24 hours that the equipment causing the emission and any associated air pollution control equipment are operating normally according to their design and standard procedures and under the same conditions under which compliance was achieved in the past, and either:

- 1) Take corrective action(s) that eliminates the visible emissions within 24 hours and report the visible emissions as a potential deviation in accordance with the reporting requirements in Section K of this permit; or
- 2) Have a CARB-certified smoke reader determine compliance with the opacity standard, using EPA Method 9 or the procedures in the CARB manual "Visible Emissions Evaluation", within three business days and report any deviations to AQMD.

The operator shall keep the records in accordance with the recordkeeping requirements in Section K of this permit and the following records:

- 1) Stack or emission point identification;
- 2) Description of any corrective actions taken to abate visible emissions;
- 3) Date and time visible emission was abated; and
- 4) All visible emission observation records by operator or a certified smoke reader.

[Rule 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 401, 3-2-1984; Rule 401, 11-9-2001]

[Devices subject to this condition: C396, C531]

E193.x

The operator shall restrict the operation of this equipment as follows:

Prior to operating this equipment, the "flapper vent" shall be blinded off permanently and that all emergency vent gases are directed to the stack without bypassing the CEMS.

[Rule 1303(b)(2)- Offset, 5-10-1996; Rule 1303(b)(2)- Offset, 12-6-2002]

[Devices subject to this condition: D139]

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E336.1 The operator shall vent the vent gases from this equipment as follows:

All vent gases shall be directed to the tail gas incinerator (Device C175).

This equipment shall not be operated unless the tail gas incinerator (Device C175) is in full use and has a valid permit to receive vent gases from this equipment.

[Rule 1303(a)(1)-BACT, 5-10-1996; Rule 1303(a)(1)-BACT, 12-6-2002; Rule 1176, 9-13-1996]

[Devices subject to this condition: D142]

E336.13 The operator shall vent the vent gases from this equipment as follows:

All emergency vent gases shall be directed to the Flare Vapor Recovery System (Process 15, System 1). If the Flare Vapor Recovery System is operating at its capacity and is unable to receive additional vent gases, the emergency vent gases shall be directed to the Refinery Flare System (Process 15, System 2).

This equipment shall not be operated unless the Flare Vapor Recovery System and the Refinery Flare system are in full use and have a valid permit to receive vent gases from this equipment.

[Rule 1303(a)(1)-BACT, 5-10-1996; Rule 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: D901]

H23.2 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1173

[Rule 1173, 2-6-2009]

[Devices subject to this condition: D617, D618, D621, D657, D700, D702, D704, D706, D707, D744, D812, D856, D942]

H23.4 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
H2S	40CFR60, SUBPART	J

[40CFR60 Subpart J, 9-12-2012]

[Devices subject to this condition: D47, C531]

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BACKGROUND

Paramount Petroleum Corporation (Paramount) operates a petroleum refinery located at 14700 Downey Avenue in the city of Paramount in the southern portion of Los Angeles County. Paramount processes crude oil into a variety of products including specialized road and roofing asphalts, diesel fuel, jet fuel, and gasoline components. Emission sources at the refinery include combustion sources (heaters, boilers, and IC engines), fugitive components (pumps, valves, flanges, compressors, drains, etc.), storage tanks, flares and loading/unloading facilities. The South Coast Air Quality Management District (SCAQMD) identification number for the facility is 800183.

On February 18, 2014, Paramount was issued permits for the construction and operation of the Alt-Air Renewable Fuels (RF) Project that will convert up to 3,500 barrels per day of non-edible vegetable oils and non-edible beef tallow into renewable jet and diesel fuel. On November 11, 2014, Paramount was issued permits to modify the RF Project to add a side cut stripper to the existing Naphtha Splitter, to reuse some units from the Isomerization Unit as an alternative to the Second Stage Reaction and Fractionation System and to modify the Renewable Fuels First and Second Stage Reaction and Fractionation Units to reduce the fugitive leak threshold, thereby reducing the potential to emit emissions for the overall project. Due to additional design and further engineering analysis, Paramount is proposing to modify the RF Project to route the acid gas from the Amine Regeneration unit to the Asphalt Blowing (AB) H-907 Incinerator. Paramount has determined that this change would be more practical than using the Caustic Scrubber. This modification will also resolve the potential compliance issue of the unmonitored “flapper vent” related to the H-907 Incinerator. Initially, Paramount requested to add refinery gas as additional fuel to the incinerator. However, on March 13, 2015, it rescinded this request.

The RF Project is considered to be a project under the California Environmental Quality Act (CEQA). The City of Paramount is the designated Lead Agency for the proposed project, adopted a Mitigated Negative Declaration and intends to adopt an addendum to the Mitigated Negative Declaration as a result of this modification to the original project.

Additionally, this engineering evaluation addresses past request made by Paramount, A/N 535708, for permit correction to the SOx Scrubbing system serving the Asphalt Blowing Plant. Paramount claims that the Knockout Pot D-931 was constructed at the same time as the rest of System 4 Process 15 in 1999, but was inadvertently left off the permit.

Table 1 lists permit processing tracking information and fees. The master file for this project evaluation is A/N 572516. All of the documentation referenced in the evaluation is only contained in the folder for A/N 572516.

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Table 1: PERMIT ADMINISTRATION & APPLICATION TRACKING INFORMATION

	<i>A/N</i>	<i>Equipment Description</i>	<i>Permit Action</i>	<i>Status/ Type</i>	<i>BCAT/ CCAT</i>	<i>Previous A/N</i>	<i>Fee Paid</i>
1	572513	Title V Revision	De Minimis Significant Permit Revision	21/86	555009	N/A	\$1,909.72
2	572516	Amine Regeneration Unit, P6S7	Modification	20/50	90	555014	\$5,067.91
3	572517	Asphalt Blowing Stills Incinerator, P15S3	Modification	20/10	05	435397	\$5,067.91
4	535708	SOx Scrubbing System, P15S4	Modification	21/30	4J	353057	\$7,121.79

FACILITY, EQUIPMENT AND NEAREST RECEPTOR LOCATION

This project is located within the boundary of the Paramount Refinery which resides at 14700 Downey Avenue in the City of Paramount. The refinery is bounded by Contreras street on the north, Downey Avenue on the west, Somerset Boulevard on the south and Lakewood Boulevard on the east. The refinery occupies approximately a half of the total acreage of the area known as the Somerset Ranch Area in the 1990 Paramount General Plan. The area is designated as mixed use that includes a combination of residential, commercial, and industrial and public uses.

The refinery is bounded on the north by Wirtz Elementary School and Cinderella Mobil Home Community along Contreras Avenue. A single-family residential neighborhood is located along Castana Avenue. There are an Albertsons supermarket and a Wal-Mart along Lakewood Boulevard. The Hazy 8 Motel, two trailer parks and a mix of commercial and light industrial uses are located to the east of the facility. Commercial businesses and single-family residences are located along Somerset Boulevard south of the site. The Southern Pacific railroad tracks and Departments of Water and Power easement separate the refinery from a commercial self-storage facility, the Somersatt Village condominiums and single-family neighborhood southwest of the site. The railroad tracks and electrical easement continue northwest across Downey Avenue and separate single and multiple-family residences located west of the site from Paramount High School on the northwest.

As described above, the nearest residential and commercial receptor locations are adjacent to the refinery. The Amine Regeneration Unit is located within 1000 feet from the outer boundaries of two schools – Wirtz Elementary and Paramount High School. The other schools located nearest to the refinery include the Albert Baxter Elementary School, Paramount High School (West Campus) and Park Elementary School.

The refinery map showing the location of the project is included in the applicant’s submittal.

COMPLIANCE RECORD REVIEW

A review of the SCAQMD Compliance Database showed 21 Notices of Violation (NOV) and Notices to

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Comply (NC) issued to Paramount in the past five years (03/01/2010 – 03/27/2015). All notices are either closed or in compliance status. There are no outstanding Stipulated Orders for Abatement (SOFA) nor Variance Cases.

Permitting and RECLAIM issues were raised when Engineering and Compliance staff conducted field inspections on December 9, 2014 to determine if there is any bypass line(s) or bypass stack(s) or other means by which NOx and/or SOx emissions can be released into the atmosphere without being properly monitored and reported as required under the RECLAIM program. The following issues were discovered during this RECLAIM audit inspection:

1. Fuel Mix Drum D-807 was found lying on the plant floor undergoing repairs. According to Paramount, the drum was removed for repair on August 27, 2014. There is a gas line installed to provide natural gas directly to Asphalt Heater H-701 (D123), Asphalt Heater H-702 (D124), Asphalt Heater H-704 (D126), Asphalt Heater H-705 (D127), Boiler 7 (D374), Boiler 8 (D375) and Boiler 9 (D376). The RECLAIM monitoring equipment for Drum D-807 is temporarily tied into the natural gas line to continue to monitor the total sulfur in the fuel gas and the fuel properties. Permitting and RECLAIM issues were raised regarding the alternate location of the associated sampling point for Drum D-807. According to Paramount, the connection to the natural gas line will be permanently removed and Fuel Mix Drum D-807 will be returned to its original state with its monitoring location.
2. An unmonitored “flapper vent” in the AB Plant Incinerator system was discovered. According to Paramount, the flapper vent will be sealed and bolted closed before any further operation of the incinerator. Further discussion is covered under the Project and Process Description of this report.

PERMIT HISTORY

A summary of the permitting history for the subject permit units is contained in the following tables.

Table 2: Amine Regeneration Unit, P6S7, A/N 572516

<i>Permit to Construct</i>		<i>Permit to Operate</i>		<i>Description of Permitting Activity</i>
<i>A/N</i>	<i>Issue Date</i>	<i>No</i>	<i>Issue Date</i>	
A79442				Douglas Oil Company
104015			09/16/1983	Change of ownership to Pacific Oasis
104015			04/27/1984	Pacific Oasis to Paramount
458562			05/30/2013	Modification due to the installation of the new flare gas vapor recovery system
482640	07/25/2008			To vent to stand-by caustic absorber during emergency
555014	02/18/2014			To vent to either Sulfur Recovery Unit or Caustic Storage and Scrubbing System during Renewable Fuels operation

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Table 3: Incinerator, Asphalt Blowing Plant, P15S3, Dev C531, A/N 572517

<i>Permit to Construct</i>		<i>Permit to Operate</i>		<i>Description of Permitting Activity</i>
<i>A/N</i>	<i>Issue Date</i>	<i>No</i>	<i>Issue Date</i>	
335220	5/21/1998			Construction of the incinerator for control of emissions from the four asphalt blowing stills
353056	8/27/1999			Increase rating from 14 MMBtu/hr to 18 MMBtu/hr and connection of the vent streams from ten tanks and two asphalt loading racks. Also added a SOX scrubber and a flue gas reheater downstream of the incinerator. This was part of a project to increase the asphalt production capability of the refinery from 2,990 bpd to 6,000 bpd
417079				Propose connection of the Crude Unit API separator (D254), Crude Unit Water Wash Drum (D818, D2), and five asphalt loading racks
435397	11/03/2009	G22166	12/20/2012	Propose to change the permitted firing rate from 18 MMBtu/hr to "18 MMBtu/hr on an average daily basis." Later propose to connect the vent stream from six asphalt tanks to the incinerator.
557213	2/18/2014			To receive vent from the Renewable Fuels feedstock for odor control

PROJECT AND PROCESS DESCRIPTION

The Renewable Fuels (RF) Reaction and Fractionation Systems were issued Permits to Construct in February 2014. This set of permits is referred to as Phase I. The project is currently under construction and has not started operation. The RF Project is designed to convert 3,500 barrels per day of non-edible vegetable oils and high-quality technical beef tallow into renewable jet and diesel fuel. Small quantities of naphtha and liquid petroleum gas (LPG) are produced as byproducts.

The technology for the process is called Ecofining and is provided by Universal Oil Products. The complete process description can be found in the engineering evaluation contained in the folder for A/N 555017. Ecofining is a two-stage hydrotreating process with selective catalyst, similar to conventional jet/diesel hydrotreating process. A sulfiding compound is injected into the catalyst to keep it activated. During the process, the sulfiding chemical is converted to H₂S and is absorbed into the overhead gas stream, which is treated in the amine fuel gas treating system. During normal refinery operation, sulfur in the amine regeneration system gases are recovered in the sulfur recovery unit and converted into elemental sulfur. During Renewable Fuels operation, there is not enough sulfur contained in the gas streams to operate the sulfur recovery unit. Therefore, the initial permit applications included continuous operation of the caustic scrubbing system.

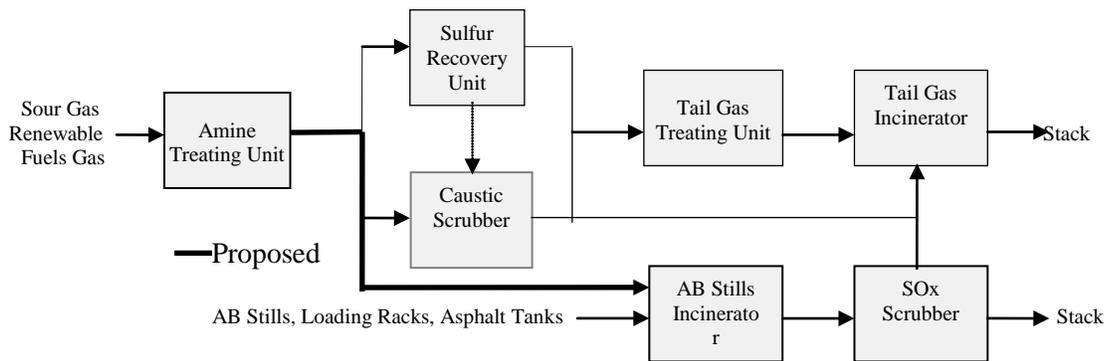
On November 11, 2014, Paramount was issued permits to modify the RF project to add a side cut stripper to the existing Naphtha Splitter, to reuse some units from the Isomerization unit as an alternative to the

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Second Stage Reaction and Fractionation System and to modify the Renewable Fuels First and Second Stage Reaction and Fractionation Units to reduce the fugitive leak threshold, thereby reducing the potential to emit emissions for the overall project. This set of permits is referred to as Phase II.

Due to additional design and further engineering analysis, Paramount is proposing to again modify the RF project to route the acid gas from the Amine Regeneration unit to the H-907 Incinerator. It determined that this change would be more practical than using the Caustic Scrubber. Paramount wants to maintain the option of going to the Caustic Scrubber in the case of over pressure in the system, where the vapors will be automatically redirected to the Caustic Scrubber (see Flapper Vent Issue section below). This modification will also address to resolve the potential compliance issue of the unmonitored “flapper vent” related to the H-907 Incinerator. Initially, Paramount requested to add refinery gas as additional fuel to the incinerator. However, on March 13, 2015, it rescinded this request. This set of permits is referred to as Phase III and is the subject of this engineering evaluation.

PROPOSED OPERATION WITH RENEWABLE FUELS ONLY



Asphalt Blowing (AB) Plant Incinerator H-907/ SOx Scrubber System

The incinerator was originally constructed for control of VOC and CO emissions from Paramount’s four asphalt blowing stills. The asphalt blowing process removes the gas-oil from topped crude oil. Asphalt blowing is mainly a hydrogenation process in which the oxygen in the air bubbled through the asphalt in a still combines with hydrogen in the oil molecules to form water vapor. The progressive loss of hydrogen causes polymerization of the asphalt to the desired hardness. Each of the stills are equipped with scrubber (condenser) located downstream of the still. The excess air and asphalt fumes flow from the still through this condenser, which is filled with water or oil to remove any condensable hydrocarbons. The exhaust gas flows from these condensers to the AB Plant Incinerator for control of CO and VOC emissions from the stills. The incinerator exhaust, which has relatively high concentration of SO₂, flows through a packed bed, counter flow, SO_x Scrubber for control of the SO₂ emissions. The caustic solution in the scrubber cools the exhaust stream to about 120°F. The scrubbing liquid that is being recirculated contains sodium hydroxide dissolved in water. In order to maintain the desired high removal efficiencies, the pH of the scrubbing liquid is maintained at a pH of ≥7.5. To prevent excessive water vapor condensation in the stack, the exhaust duct is equipped with 8 MMBtu/hr duct burner to reheat the exhaust gas stream to about 400°F.

The vent streams from many of Paramount’s heated asphalt tanks and loading racks are also connected to the incinerator for odor control.

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Additionally, this engineering evaluation addresses past request made by Paramount, A/N 535708, for permit correction to the SO_x Scrubbing system serving the Asphalt Blowing Plant. Paramount claims that the Knockout Pot D-931 was constructed at the same time as the rest of System 4 Process 15 in 1999, but was inadvertently left off the permit. D-931 serves as a knockout vessel downstream of the four scrubbers of the Asphalt Oxidizing Units 1, 2, 3 & 4 to remove oil and water from the vent stream before entering the H-907 Incinerator. A review of the file submitted by Paramount in 1999 shows that the Knockout Pot D-931 has been a part of the construction plan of the SO_x Scrubbing System. A copy of the piping and instrumentation diagram is included in this engineering evaluation folder.

Flapper Vent Issue

SCAQMD Engineering and Compliance staff conducted field inspections to determine if there is any bypass line(s) or bypass stack(s) or other means by which NO_x and/or SO_x emissions can be released into the atmosphere without being properly monitored and reported as required under the RECLAIM program. On December 9, 2014, an unmonitored “flapper vent” in the AB Plant Incinerator System that may be considered bypass stack was discovered by Engineering and Compliance staff.

To address this issue, Paramount is proposing to seal and bolt-close the “flapper vent” before any further operation of Incinerator H-907. Please see Attachment 1 process flow diagrams (PFD) for the proposed modification. Under normal operation, vent gases are combusted in Incinerator H-907, where H₂S is converted to SO₂ and then flow through waste heat boiler X-901 to be cooled prior to entering the SO_x scrubber. Following scrubbing, the resulting moist gases pass through duct burner H-908 to dry before going out the stack. Pressure control valve PCV-935 will be installed to replace the flapper vent and will normally be closed.

In the case of overpressure, a pressure switch will be located at the Incinerator that will open PCV935, and simultaneously close the valve at the Amine Regenerator to stop the flow of vapors to the Incinerator. Another valve will open redirecting the vapors to the existing Caustic Scrubbing System. The Incinerator will remain operating to burn the remaining vapors in the line, and then will be shut down if needed until the cause of the overpressure is determined and repaired. Operators will then return the vapors to the Incinerator and close off the valve to the Caustic Scrubber.

When PCV-935 opens, the combusted gas will be routed through the existing heat exchanger X-902 to the stack. X-902 will cool the gas enough to protect the stack and the CEMS operation. The connection of the vent line from X-902 to the stack will be installed at a location that will avoid disruption to the operation of the CEMS. Because X-902 must be on constant standby and because hot combusted vapors reside in the line, X-902 must be cooled. Heat transfer fluid is circulated from Hot Oil Surge Drum D932 (Dev D901, P4S12) through X-902, then returned to the drum via a new air cooler, X-907.

EMISSIONS CALCULATIONS

SO_x EMISSIONS

The emission rates are based on the mandated outlet SO_x concentration of **20 ppm and the design stack gas flow rate of 36,500 scfm**. The incinerator is currently subject to 40CFR60 Subpart J, with a 20 ppm SO₂ limit.

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Maximum Potential to Emit SO_x Emissions:

$$\text{lbs/day} = \frac{\text{ppm} \times \text{MW}_{\text{SO}_x} \times \text{scfm} \times 60 \text{ min/hr} \times 24 \text{ hr/day}}{10^6 \times 379 \text{ cf / mole}}$$

where: ppm = SO_x concentration (20 ppm)
 MW SO_x = MolecularWeight of SO_x (64)
 scfm = Flue gas maximum flow rate design (36,500 dscfm)

= **178 lbs/day**

Controlled SO_x Emissions from Renewable Fuels:

According to Paramount, an estimated **70 lbs/hr H₂S will be generated by the Renewable fuels operation**. The H₂S stream will be oxidized in the incinerator, converting it to SO₂, which will then be removed by the SO_x scrubber then out the stack.

$$\text{SO}_2, \text{ lbs/day} = \frac{70 \text{ lbs H}_2\text{S/hr} \times 64 \text{ lb SO}_2\text{/lb-mole}}{\text{day}/24 \text{ hrs} \times 34 \text{ lb H}_2\text{S/lb-mole}} \times (100-99.0\%)$$

= **31.6 lbs/day**

Current SO_x emissions:

Based on the highest reported SO_x emissions, the current SO_x emissions for incinerator/scrubber is **15.36 lbs/day**.

Based on the above data, the additional SO₂ loading to the incinerator from the amine regenerator due to the modification of the Renewable Fuels Project is well within the design capacity of the Incinerator and the SO_x scrubber system. (Note that the **design stack gas flow rate from the Incinerator and the SO_x scrubber is 36,500 scfm.**)

VOC EMISSIONS

According to Paramount, the flow rate of the Renewable Fuels vent gas from the amine regenerator is approximately **376 cfm with VOC content of 0.36% by weight propane**. For calculating the maximum potential to emit VOC emissions, **1.00 % by weight propane** is used.

Maximum Potential to Emit VOC Emissions from Amine Regeneration Unit

$$\text{Uncontrolled VOC, lbs/day} = \frac{\text{ppm} \times \text{MW}_{\text{C}_3\text{H}_8} \times \text{scfm} \times 60 \text{ min/hr} \times 24 \text{ hr/day}}{10^6 \times 379 \text{ cf / lb-mole}}$$

where: ppm = VOC concentration (10,000 ppm)
 MW SO_x = MolecularWeight of C₃H₈ (44 lb/lb-mole)

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$$\begin{aligned} \text{scfm} &= \text{vapor flow rate (376 dscfm)} \\ &= \mathbf{628.58 \text{ lbs/day}} \end{aligned}$$

VOC control efficiency for the Incinerator measured during the March, 1999 source test was 99.3%.

$$\begin{aligned} \text{Controlled VOC, lbs/day} &= 628.58 \times (100-99.30\%) \\ &= \mathbf{4.40 \text{ lbs/day}} \end{aligned}$$

Currently, 10,400 scfm of vent gas from the four stills, loading racks and tanks is vented to the Incinerator. The additional load of 376 scfm from the Amine Regenerator Renewable Fuels vent gas is approximately 3.6% the current vent rate. As presented in APPENDIX A, an analysis of the Incinerator design shows that the Incinerator can handle the additional flow of 376 cfm. Refer to PC A/N 353039 for original Incinerator design calculations.

Fugitive Emissions from Amine Regeneration Unit

VOC emissions are from the fugitive components that will be installed as shown in the APPENDIX B: Fugitive Emission Calculation. Emissions from fugitive components are calculated using fugitive component counts provided by the facility and the CAPCOA-revised 1995 EPA Correlation Equations. (Table IV-3a from AQMD Guidelines for Fugitive Emissions Calculations, June 2003). There will be a net emissions increase of **0.50 lb/day** from the fugitive components. Details on the component counts and associated emissions are provided in the Appendix.

$$\mathbf{\text{TOTAL VOC} = 4.40 + 0.50 = 4.90 \text{ lbs/day}}$$

CO, NO_x, and PM₁₀ Emissions

Since there is no change in the maximum rating of the incinerator, there will be no change in baseline emissions. Also, condition C8.1 will ensure that the operating parameter of this incinerator will remain the same. For this reason, potential CO, NO_x and PM₁₀ emissions will remain the same.

The maximum potential emissions is based on the permitted maximum rating of the burner (30 MMBTU/hr and 18 MMBtu/hr on an average daily basis) using AER Form R-2 emission factor for natural gas for ROG, CO and PM₁₀. The SO₂ and NO_x emission factors are the default emission factor for natural gas from Rule 2002. The natural gas heat capacity is 1050 BTU/scf. The AEIS and NSR emissions are summarized below in Table 4.

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Table 4: COMBUSTION EMISSIONS CALCULATIONS SUMMARY

<i>Pollutants</i>	<i>Emission Factor (lb/MMscf)</i>	<i>Fuel Flow (MMscf/hr)</i>	<i>Ave. Hourly (lb/hr)</i>	<i>Max Daily (lb/day)</i>	<i>Max Yearly Emissions (lbs/yr)</i>
ROG	7	1.71E-02	0.12	2.87	1,049
NOx	130	1.71E-02	2.23	53.35	19,474
SOx	0.60	1.71E-02	0.01	0.25	90
SOx ¹	From Air Blowing Stills		7.08	169.92	62,021
CO	35	1.71E-02	0.60	14.36	5,243
PM10	7.5	1.71E-02	0.13	3.08	1,124

¹ Values taken from A/N 353057

Paramount has been on limited production since November 2012 due to economic reasons. Therefore, the year with the highest asphalt production within the last five years prior to 2012 was used to determine the compliance level of NOx and SOx emissions. The year 2009 reported RECLAIM emissions for both NOx and SOx for the year with the highest asphalt production for the incinerator (11,227.35 lbs NOx and 5,634.69 lbs SOx) are well below the calculated maximum emissions above. The reported daily average firing rate for 2009 is 10.22 MMBtu/hr (<18 MMBtu/hr permit limit). All company records are included in this engineering evaluation folder.

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Table 5: SUMMARY OF CHANGE IN VOC EMISSIONS FOR THE MODIFIED PROJECT

<i>A/N</i>	<i>Equipment Description</i>	<i>Pre-Modification lbs/day</i>	<i>Post-Modification lbs/day</i>	<i>Emission Increase lbs/day</i>
Phase I				
Permits to Construct issued on 2/18/2014				
424094	Penex Plus Isom Unit, P16S3	29.23	0	-29.23
555017	Renewable Fuels, First Stage, P18S1 (Kerosene Hydrodesulfurization Unit HDS5, P2S3)	35.58	16.38	-19.20
555018	Renewable Fuels, Second Stage, P18S2	0.00	28.61	28.61
558557	Filter, Jet Recirculating	0.00	0.44	0.44
558558	Filter, Jet Shipping	0.00	0.44	0.44
558560	Filter, Diesel	0.00	0.44	0.44
Net Total Phase I				-18.5
Phase II				
(Permits To Construct issued on 11/25/14)				
563685	Naphtha Splitter, P2S6	8.29	11.87	3.58
563686	Stabilization Unit, P2S7	0.00	12.03	12.03
563687	Naphtha Loading Rack 22, P8S20	3.12	3.12	0.00
566338	Renewable Fuels, First Stage, P18S1 (Kerosene Hydrodesulfurization Unit)	16.38	15.15	-1.23
566339	Renewable Fuels, Second Stage, P18S2	28.61	16.39	-12.22
Net Total Phase II				2.16
Phase III				
(Subject of this engineering evaluation)				
572516	Amine Regeneration Unit, P6S7			4.90
572517	Air Blowing Stills Incinerator, P15S3			0.00
Net Total Phase II				4.90
TOTAL				-11.44

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RULES EVALUATION

PART 1: SCAQMD REGULATIONS

Rule 212 Standards for Approving and Issuing Public Notice (Amended Nov 14, 1997)
 Rule 212 requires public notice for any new or modified permit unit, RECLAIM source or Title V equipment that increases emissions of toxic air contaminants and increases health risk as specified in Rule 212(c)(1) - (c)(3).

According to Rule Implementation Guidance No. E2006-01: Rule 212 Public Notices-Facility Modification, a modification to an existing facility will trigger public notice requirement unless the modification will result in a reduction of emissions of air contaminants and no increase in health risk will occur at any receptor location. The Amine Regenerator Unit is in the same general area as the Isom Unit where there is an emission decrease. The refinery map showing the location of the project is included in the applicant's submittal. As shown in Table 6, the Renewable Fuels Project, consisting of Phases I, II & III, results in decrease in emissions of 15.58 lbs/day. The project does not require public notice per Rule 212(c)(1). Table 6 lists the permit units that are located within 1,000 feet of schools and their emissions.

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Table 6: SUMMARY OF EMISSIONS FOR RULE 212(c)(1)

A/N	Equipment Description	Pre-Modification lbs/day	Post-Modification lbs/day	Emission Increase lbs/day
Phase I (Permits to Construct issued on 2/18/2014)				
424094	Penex Plus Isom Unit, P16S3	29.23	0	-29.23
555017	Renewable Fuels, First Stage, P18S1 (Kerosene Hydrodesulfurization Unit HDS5, P2S3)	35.58	16.38	-19.20
555018	Renewable Fuels, Second Stage, P18S2	0.00	28.61	28.61
Net Total Phase I				-19.82
Phase II (Permits to Construct issued on 11/25/14)				
563685	Naphtha Splitter, P2S6	8.29	11.87	3.58
563686	Stabilization Unit, P2S7	0.00	12.03	12.03
563687	Naphtha Loading Rack 22, P8S20	3.12	3.12	0.00
566338	Renewable Fuels, First Stage, P18S1 (Kerosene Hydrodesulfurization Unit)	16.38	15.15	-1.23
566339	Renewable Fuels, Second Stage, P18S2	28.61	16.39	-12.22
Net Total Phase II				2.16
Phase III (Subject of this engineering evaluation)				
572516	Amine Regeneration Unit, P6S7			4.90
Net Total Phase II				4.90
TOTAL				-12.76

According to the same guidance, when determining if a project consisting of multiple applications triggers a public notice under Rule 212(c)(2), the total emissions from all of the project's applications shall be used to determine if the emission increases at the facility exceed any of the daily maximums in subdivision(g). This project does not include an emission increase that exceeds any of the daily maximums in Rule 212(g), so the criteria in 212(c)(2) are not met. According to the same guidance, Rule 212(c)(3) requires public notice for any new or modified permit unit with increases in emissions of toxic air contaminants resulting in a maximum individual cancer risk (MICR) greater than the specified thresholds. The emission increase does not result in MICR over the thresholds in Rule 212(c)(3)(A) and is not likely to pose a potential risk of nuisance per 212(c)(3)(B).

The project does not require notice per Rule 212(c)(2) and (c)(3). The facility is expected to comply with this requirement.

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Rule 401 Visible Emissions (Amended Nov. 9, 2001)
 Operation of the modified Renewable Fuels facility is not expected to result in visible emissions. Therefore, compliance with this rule is expected.

Rule 402 Nuisance (Adopted May 7, 1976)
 There is a potential nuisance issue with the Renewable Fuels feedstock storage tank based on the SCAQMD findings that the feedstocks have distinct odors. To mitigate odors, Paramount has agreed to vent the storage tank to either the AB Incinerator and/or a carbon adsorption system. This has been addressed in Phase I of this project. Operation of the modified Renewable Fuels facility is therefore, not expected to result in a public nuisance; compliance with this rule is expected.

Reg IX Standards of Performance for New Stationary Sources

40 CFR 60 Subpart GGG: Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After January 4, 1983 and on or before November 7, 2006

This regulation is applicable to affected facilities in refineries that begin construction before November 7, 2006. The following are affected facilities under this subpart:

- Compressors
- The group of all equipment within a process unit

Subpart GGG refers to Subpart VV – Standards of Performance for Equipment leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry. All new components in VOC service are expected to meet the equipment standards and monitoring requirements in Sections 60.482-1 to 60.482-10 for pumps, valves, pressure relief devices, closed vent system, etc. In general, the equipment leak inspection and monitoring requirements of this regulation have been incorporated into Paramount’s Inspection and Monitoring (I&M) Program for fugitive emissions. It is expected that Paramount will comply with the inspection, maintenance and recordkeeping requirements of this rule.

The fugitive components of the Naphtha Splitter System are already subject to Subpart GGG as per system condition, S4.2. Continued compliance is expected.

40 CFR 60 Subpart GGGa: Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 (Amended June 2, 2008)

This regulation is applicable to affected facilities in refineries that begin construction after November 7, 2006 per §60.590a.

For Phase I, the Renewable Fuels process unit does not constitute a new “construction” under Part 60, Subpart A, since the existing Kerosene Hydrotreating Unit will be modified reusing certain vessels and fugitive components for the proposed Stage1 and Stage 2 RF process.

For Phase II, Paramount is proposing to modify the RF process by adding a side cut stripper to the existing Naphtha Splitter and by reusing some units from the Isomerization unit as an alternative to the Second Stage Reaction and Fractionation System. Paramount is also proposing to modify the Renewable Fuels First and Second Stage Reaction and

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Fractionation Units by reducing the fugitive leak threshold. There will be a reduction of potential to emit emissions for the overall project. The proposed project does not therefore constitute a “modification” under Part 60, Subpart A.

For Phase III, Paramount is proposing to again modify the RF project to route the acid gas from the Amine Regeneration unit to the H-907 Incinerator. There will be fugitive components to be installed. According to Paramount, the vapor stream contains less than 10% by weight VOC, thus the fugitive components are not considered to be “in VOC service.” “In VOC service” is defined as the pieces of equipment containing a process fluid that is at least 10% by weight. According to §60.485a(d)(3), engineering judgment may be used to estimate VOC content, if a piece of equipment had not been shown previously to be in service. The standards therefore do not apply to the fugitive components to be installed. It is noted here that Paramount is claiming exemption from SCAQMD Rule 1173 for all the new components to be installed for the Phase III amine regeneration system due to the low VOC content of the vapor stream. Paramount will be required to conduct analysis of the VOC content per test method specified in Rule 1173(j)(2) to demonstrate compliance with Rule 1173(l)(1)(D).

Additionally, this process unit is not considered “reconstruction” per 40 CFR 60.15 that may render the process unit to be an affected facility. “Reconstruction” is defined as the replacement of components of an existing facility to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility and it is technically and economically feasible to meet the applicable standards set forth in this part. According to Paramount, the cost for a new Renewable Fuels unit utilizing the same UOP technology was approximately \$463 million installed for a 9,300 barrels/day unit. The cost then for a new 3,500 barrels/day unit is approximately \$175 million $((463/9,300)3,500)$. Paramount initially estimated the cost of the proposed Renewable Fuels Unit to be less than \$44 million. As of Phase III, Paramount estimates the cost to be \$57 million, which is less than 35 percent of the replacement value of the complex.

For the reasons discussed above, 40 CFR 60 Subpart GGGa does not apply to Renewable Fuels project.

40 CFR 60, Subpart J: Standards of Performance for Petroleum Refineries

60.100 Applicability and designation of affected facility and reconstruction (Amended June 24, 2008)

The provisions of this subpart are applicable to any fuel gas combustion device which commences construction, reconstruction or modification after June 11, 1973 and on or before May 14, 2007. The AB Stills Incinerator is subject to this NSPS since it was constructed in 1999. All of the gas streams that are incinerated in this device meet the definition of a fuel gas.

Condition D82.3 and H23.4 impose the monitoring, recording, reporting and compliance certification requirements of this subpart. Paramount submitted company records showing compliance to the 20 ppm SO₂ CEMS limit at the stack. Continued compliance is expected.

40 CFR 60, Subpart Ja: Standards of Performance for Petroleum Refineries

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60.100a Applicability, designation of affected facility and reconstruction (Amended June 24, 2008)

The provisions of this subpart are applicable to any fuel gas combustion device which commences construction, reconstruction or modification after May 14, 2007. All of the gas streams that are incinerated in H-907 Incinerator meet the definition of a fuel gas.

According to EPA Applicability Determination Control No. 9700157, the NSPS applicability (under the MODIFICATION provisions of Part 60, A) is evaluated at the time of a physical or operational change based on a comparison of hourly potential emissions before and after the change. Since there is no change in the maximum processing capacity of the Incinerator, there will be no change in the hourly potential emissions before and after the change. This project does not constitute a “modification” and thus does not trigger applicability of an NSPS standard.

Additionally, this project is not considered “reconstruction” per 40 CFR 60.15 that may render the Incinerator to be an affected facility. “Reconstruction” is defined as the replacement of components of an existing facility to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility and it is technically and economically feasible to meet the applicable standards set forth in this part. This project only involves the venting of additional gas stream to the Incinerator and will not cost to nowhere near the 50% of the replacement value of a new complex. .

For the reasons discussed above, 40 CFR 60 Subpart Ja does not apply to the Incinerator. However, it is noted here that the Incinerator complies with the SO₂ limit of 20 ppm as required by §60.102a(g)(1)(i). Since the Incinerator is rated at 18MMBtu/hr (<40MMBtu/hr) the NO_x limit of 40 ppm as required by §60.102a(g)(2)(i) does not apply.

40 CFR 60, Subpart UU: Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture (October 17, 2000)

This subpart applies to new construction or modification to air blowing stills and asphalt tanks per §60.470. This subpart does not apply to the subject RF project.

Reg X National Emission Standards for Hazardous Air Pollutants (Amended April 4, 2008)
 There are currently no NESHAP standards that apply to the Renewable Fuels Project as outlined in the District’s Regulation X.

Reg XI Source Specific Standards

Rule 1173: Fugitive Emissions of Volatile Organic Compound (Amended February 6, 2009)

The fugitive components of Renewable Fuels Project are subject to this rule. With proper implementation of the applicant’s extensive inspection program, no violation is expected. The facility submits Rule 1173 Quarterly Report to the SCAQMD. The report for the last four quarters is included in the applicant’s submittal. Continued compliance is expected. Paramount is claiming exemption from this rule for all the new components to be installed for the Phase III amine regeneration system due to the low VOC content of the vapor

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stream. Paramount will be required to conduct analysis of the VOC content per test method specified in Rule 1173(j)(2) to demonstrate compliance with Rule 1173(l)(1)(D).

Reg XIII

New Source Review (NSR)

Rule 1303: Requirements (Amended Dec. 6, 2002)

This rule allows the Executive Officer to deny a Permit to Construct for any new, modified or relocated source which results in an emission increase of any non-attainment air contaminant, any ozone depleting compound, or ammonia, unless BACT is used. This rule also requires modeling and offset (among other requirements) if there is a net increase in any non-attainment air contaminants for any new or modified source.

1303(a)(1) Best Available Control Technology (BACT)

There will be more than 1 lb/day of increase in VOC emissions from the Amine Regeneration Unit. VOC will be controlled by the Asphalt Blowing (AB) H-907 Incinerator. There has been no determination in the SCAQMD BACT guidelines regarding similar process. San Joaquin Valley Air Pollution Control District (SJVAPCD) had a determination from 1996 that requires 98% VOC control efficiency for a VOC incinerator for asphalt blowing (achieved in practice). H-907 Incinerator is the only asphalt blowing incinerator in the district. Its VOC control efficiency measured during the March 1999 source test was 99.3%.

Additionally, Paramount will install BACT fugitive components for heavy liquid and will continue to comply with the requirements of Rule 1173. BACT is satisfied and compliance is expected.

1303(b)(1) Modeling

According to Rule 1303 Appendix A, modeling for VOC is not required. There is no increase in PM and CO emissions.

1303(b)(2) Emission Offsets

According to 1304(c)(2) - Concurrent Facility Modification, an exemption from the offset requirement shall be allowed for the source that is part of a concurrent facility modification with emission reductions occurring after the submittal of an application for a permit to construct a new or modified source, but before the start of operation of the source, provide that it results in a net emission decrease. Phase I of the project (initial PC equipment) is currently under construction and has not started operation. With the proposed modification in Phase III, the Renewable Fuels project will result in a net emission decrease of 14.26 lbs/day, as shown in Table 5: Summary of Emissions. Offset is not required. Refer to Phases I & 2 PC evaluations for further Concurrent Facility Modification analysis.

1303(b)(3) Sensitive Zone Requirements

The facility is located in Zone 1. Therefore, emission reduction credits if required will be obtained from the same Zone 1. Compliance with this requirement is expected.

1303(b)(4) Facility Compliance

The facility is in compliance with all applicable rules and regulations of the District.

1303(b)(5) Major Polluting Facilities

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(A) Alternative Analysis: The facility must conduct an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source and demonstrate that the benefits of the proposed project outweigh the environmental and social costs associated with the project. Paramount complies with this requirement through 1303(b)(5)(D)(i).

(B) Statewide Compliance: The facility must demonstrate that all major stationary sources, as defined in the jurisdiction where the facilities are located, that are owned or operated by the facility in the State of California are subject to emission limitations and are in compliance or on a schedule for compliance with all applicable emission limitations and standards under the Clean Air Act. Paramount complies with this requirement by providing the District with a Statewide Compliance Certification.

(C) Protection of Visibility: This requirement does not apply since there is no increase in PM or NOx emissions.

(D) Compliance Through California Environmental Quality Act: The proposed Renewable Fuels Project is considered to be a project under CEQA. The City of Paramount is the designated Lead Agency for the proposed project and is responsible for the project's environmental review. The Mitigated Negative Declaration and Initial Study conducted by the City of Paramount determined that the proposed project is not expected to have significant adverse environmental impacts, with the implementation of the recommended mitigation measures. A copy of Mitigated Negative Declaration and Initial Study are included in this engineering evaluation package. Paramount will provide to the District a copy of the signed Notice of Determination With Addendum prior to the issuance of these permits.

Rule 1313(g): Emission Limitation Permit Conditions (Amended Dec. 7, 1995)

Every permit shall have conditions identifying BACT and monthly maximum emissions from the permitted source. The Renewable Fuels permit units have BACT and monthly emission limit conditions. Compliance is expected.

Reg XIV Toxics and Other Non-Criteria Pollutants

1401(d)(1) MICR and Cancer Burden

The cumulative increase in MICR shall not result in an increased MICR greater than one in one million, if the permit is constructed without T-BACT and greater than ten in one million if the permit unit is constructed with T-BACT. As shown in the Risk Assessment, Appendix C, MICR is very well below the specified limit.

1401(d)(2) Chronic Hazard Index

The cumulative increase in total chronic HI for any target organ system shall not exceed 1.0 at any receptor location. As shown in the Risk Assessment, Appendix C, chronic hazard index is very well below the specified limit.

1401(d)(3) Acute Hazard Index

The cumulative increase in total acute HI for any target organ system due to total emissions from the new, relocated or modified permit unit will not exceed 1.0 at any receptor location. The total emissions shall be calculated according to 1401(f)(4) based on

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maximum hourly basis from permit conditions which directly limit the emissions. As shown in the Risk Assessment, Appendix C, acute hazard index is very well below the specified limit.

1401(d)(4) Risk per Year

The risk per year shall not exceed 1/70 of the maximum allowable risk specified in (d)(1)(A) or (d)(1)(B). Since the MICR is less than 1 in a million, the facility complies with this requirement.

1401(d)(5) Operating conditions imposed pursuant to Rule 1401, which prohibit or limit the use or emission of toxic air contaminants, shall apply only to those toxic air contaminants listed in the version of Rule 1401 applicable at the time the permit conditions were imposed. There is no permit conditions prohibiting or limiting the use of toxic air contaminants for the subject pieces of equipment.

1401(d)(6) Federal New Source Review for Toxics

Section 112 of the federal Clean Air Act (CAA) defines major source as any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant (HAP) or 25 tons per year or more of any combination of hazardous air pollutants (HAPs). Since Paramount does not emit more than 10 tons annually of a listed HAP or more than 25 tons annually of a combination of HAPs, it is not subject to this requirement.

Reg XVII

Prevention of Significant Deterioration (PSD)

This regulation sets forth preconstruction review requirements for stationary sources to ensure that air quality in clean air areas does not significantly deteriorate while maintaining a margin for future industrial growth. The SCAQMD is presently considered in attainment for the following criteria pollutants: NO₂, SO₂, CO and Lead; thus these pollutants are subject to PSD regulations. Since emissions are low, PSD does not apply.

Rule 1717: Prevention of Significant Deterioration of Green House Gases

As discussed in the Phase 1 of the project, CO₂ emissions are based on a pilot plant testing of the process, which generated 1,812.4 lb/hr of CO₂ at a feed rate of 2,500 barrels per day. The proposed project can process up to 3,500 barrels per day, which would scale up the CO₂ rate to 2,537.4 lb/hr. Under full load, the process will generate 11,114 short tons per year, which is below the PSD threshold of 75,000 short tons per year. Compliance is expected.

On June 23, 2014, the United States Supreme Court issued its decision in *Utility Air Regulatory Group v. EPA*, 134 U.S. 2427. Subsequently, on July 24, 2014, EPA issued guidance for use in interpreting and applying that decision. This guidance can be found at <http://www.epa.gov/nsr/documents/20140724memo.pdf>. According to EPA's guidance, the Supreme Court decision held that EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source requiring a PSD or Title V permit. However, the Court also said that EPA may continue to require PSD permits that are required based on emissions of conventional pollutants ("anyway sources") to require best available control technology (BACT) for GHGs. Accordingly, EPA stated that it would no longer require sources to obtain PSD or Title V permits based solely on their emissions of GHGs, but would continue to require GHG BACT for anyway sources.

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Rule 1714(b), “Applicability” provides as follows: “The provisions of this rule shall apply to any source and the owner or operator of any source subject to any GHG requirements under 40 Code of Federal Regulations Part 52.21 as incorporated into this rule.” Since EPA is interpreting its own regulations to no longer require permits or BACT except for anyway sources, Rule 1714 analysis no longer applies to this project.

Reg XX

Regional Clean Air Incentives Market (RECLAIM)

Paramount is a Cycle 1 NOx and SOx RECLAIM facility. The AB Stills Incinerator is subject to both the NOx and SOx requirements of this regulation.

Rule 2005: New Source Review for RECLAIM

2005(c) Requirements for Existing RECLAIM facilities

This subdivision requires BACT, modeling and proof of sufficient RECLAIM Trading Credits (RTC) for an application for a Facility Permit amendment that results in any increase in NOx and SOx emissions. According to 2005(d), “An increase in emissions occurs if a source’s maximum hourly potential to emit immediately prior to the proposed modification is less than the source’s post- modification maximum hourly potential to emit. The incinerator is currently subject to 40CFR60 Subpart J, with a 20 ppm SO₂ limit and there will be no change in the rating of the AB Plant Incinerator, therefore, there will be no increase in the maximum hourly potential to emit NOx or SOx emissions. This subdivision does not apply.

2005(g) Additional Federal Requirements for Major Stationary Sources

This subdivision lists additional requirements for application for a Facility Permit or an Amendment to a Facility Permit for a new, relocated or modified major stationary source, as defined in the Clean Air Act, 42, U.S.C. Section 7511a(e). Section 7511a(e)(2) defines modification as any change at a major stationary source which results in any increase in emissions. There will be no change in the rating of the AB Plant Incinerator, therefore, there will be no increase in NOx or SOx emissions. This subdivision does not apply.

Rule 2011: Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SOx) Emissions (Amended 5/6/05)

The incinerator is subject to this rule as a major source. A SOx CEMS is installed, maintained and operated to comply with the requirements of this rule. Continued compliance with the monitoring, reporting and recordkeeping is expected.

Rule 2012: Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions (Amended 5/6/05)

The incinerator is subject to this rule as a major source. A NOx CEMS is installed, maintained and operated to comply with the requirements of this rule. Continued compliance with the monitoring, reporting and recordkeeping is expected.

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Reg XXX Title V Permits

Rule 3001(a): Applicability (Amended November 5, 2010)

The Title V Permit system is the air pollution control permit system required to implement the federal Operating Permit Program as required by Title V of the federal Clean Air Act as amended in 1990. Paramount has been designated as a Phase One Title V facility. The final initial Title V permit was issued on March 19, 2009.

Rule 3005: Permit Revisions (Amended March 16, 2001)

The permit for this project will be issued as a “de minimis significant permit revision” of the Title V permit as defined in Rule 3000(b)(6), because the cumulative emission increase is not greater than the following threshold:

<u>Air Contaminant</u>	<u>Daily Maximum in lbs/day</u>
HAP	30
Volatile Organic Compounds	30
Nitrogen Oxides	40
PM10	30
Sulfur Dioxide	60
Carbon Monoxide	220

Table 7 below shows that the cumulative emission increase is not greater than the threshold; therefore the requirements of this rule have been met. The revision will be applicable to a 45-day EPA review.

Table 7: De Minimis Emissions Accumulation for Paramount Refinery
(Initial Title V Issuance to Latest Revision, March 19, 2009 – November 25, 2014)

<i>Air Contaminant</i>	<i>Current, lbs/day</i>	<i>Additional due to this project (Phase III), lbs/day</i>	<i>Total, lbs/day</i>
HAP	0.00	0.00	0.00
VOC	6.22	4.90	11.12
NOx	0.59	0.00	0.59
PM10	0.02	0.00	0.02
SOx	0.03	0.00	0.03
CO	0.50	0.00	0.50

Rule 3006: Public Participation (Amended November 14, 1997)

Since the permit for this project will be issued as a “de minimis significant permit revision” of the Title V permit, it will not be subject to public notice requirements of this rule.

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PART 2: STATE REGULATIONS

CEQA California Environmental Quality Act (CEQA)
 CEQA requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid or eliminate identified significant adverse impacts of these projects be considered. The proposed Renewable Fuels Project is considered to be a project under CEQA. The City of Paramount is the designated Lead Agency for the proposed project and is responsible for the project's environmental review. The Mitigated Negative Declaration and Initial Study conducted by the City of Paramount determined that the proposed project is not expected to have significant adverse environmental impacts, with the implementation of the recommended mitigation measures. A copy of Mitigated Negative Declaration, Initial Study and the signed Notice of Determination are included in this engineering evaluation package. Paramount will provide the District a copy of the signed Notice of Determination with Addendum due to the modification of the project prior to the issuance of these permits.

PART 3: FEDERAL REGULATIONS

40 CFR 63 Subpart CC: National Emission Standards for Hazardous Air Pollutants (NESHAP) for Petroleum Refineries

§63.640 Applicability and designation of affected source (Amended May 25, 2001)

The refining process units and equipment located at the Paramount Refinery are subject to the requirements of this subpart addressing:

- miscellaneous process vents
- storage vessels
- wastewater streams,
- loading, and
- equipment leaks

Paramount has provided data to the District to show that Paramount Refinery is not a 'major' HAP source, which is defined as a source emitting 10 tpy of any single HAP or 25 tpy of all HAPs combined. As an 'area source' HAP source emitting less than these thresholds, the facility is not subject to any major source Maximum Achievable Control Technology (MACT) Standards, including 40CFR63 Subpart CC, except for the reporting and recordkeeping requirements of 40CFR61 Subpart FF-National Emission Standard for Benzene Waste Operation. The Subpart FF requirements have been incorporated into the Title V permit as facility condition F52.2. Compliance is expected.

40 CFR 63 Subpart AAAAAA: National Emission Standards for Hazardous Air Pollutants (NESHAP) for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing

§63.11559 Applicability (Adopted December 2, 2009)

As an 'area source' HAP source, the collection of the air blowing stills located at the Paramount Refinery is subject to the requirements of this subpart. There will be no modification to the air blowing stills and the stills are not a part of these project applications, therefore this subpart does not apply.

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Note: Federal Rules 40CFR60 Subpart UU, 40CFR60 Subpart GGG and 40CFR60 Subpart GGGa are evaluated under Regulation IX above.

CONCLUSION AND RECOMMENDATION

The construction and operation of the various pieces of equipment for the modified Renewable Fuels project, Phase III, are expected to comply with all applicable District, State and Federal Rules and Regulations. Therefore, issuance of Permits to Construct is recommended.

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APPENDIX A: Analysis of Incinerator Design

1. Burner Size @ 1400°F

Total flow rate to the Incinerator = 10,400 + 376 = 10,776 scfm
 10,400 scfm = Existing total flow rate from the stills, racks and tanks
 376 scfm = Additional flow rate from Renewable Fuels acid gas

- a) Net heat required to raise incinerator inlet gas temperature from 400°F to 1400°F , minimum Incinerator temperature:

Assume exhaust gases to have the same properties as air. From AP-40, Second Edition, Table D4, page 946:

Enthalpy @ 1400°F, h_1 = 26.13 btu/scf
 Enthalpy @ 400°F, h_2 = 6.29 btu/scf

Q_{NET} = (10,776 scf/min) (60 min/hr) (26.13 – 6.29 Btu/scf)
 = 12,827,750 Btu/hr

- b) Natural Gas Fuel Required

At 1400°F, the hypothetical available heat for natural gas with theoretical air furnished as the burner's primary air is 669 Btu/scf (Table D7, page 948, AP-40, 2nd edition). Assuming no heat input from waste gas components,

Natural Gas Requirement = $Q_{NET} / \text{Hypothetical Available Heat}$
 = (12,827,750 Btu/hr) / (669 Btu/scf)
 = 19,174.51 scf of gas per hour

Equivalent Natural Gas Heat Input = 19,174.51 scf/hr x 1050 btu/scf
 = 20,133,240.54 btu/hr

The rated capacity of the burner (30 MMBtu/hr) is more than sufficient to maintain the operating temperature of the Incinerator at 1400°F.

2. Gas Residence Time

The internal volume of the Incinerator combustion chamber is 1,895.25 ft³. The maximum amount of combustion gases through the Incinerator from vented equipment is 10,776 scfm. The natural gas requirement is 19,174.51 scf of gas per hour or 319.55 scfm.

At 1400°F, combustion gas flow rate = (10,776 + 319.55) x (1400 + 60) / (60 + 460)
 = 31,152.89 ft³/min (max)

Maximum Residence Time in the Combustion chamber:

= Internal Volume of Combustion Chamber x Flow rate

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$$\begin{aligned}
 &= 1895.25 \text{ ft}^3 \times (\text{min}/31,152.89 \text{ ft}^3) \times 60 \text{ sec}/\text{min} \\
 &= 3.65 \text{ sec}
 \end{aligned}$$

The minimum recommended gas residence time is 0.3 sec. Therefore, the design residence time is more than adequate.

3. Turbulence (Good mixing of Combustion Gases):

The combustion chamber cross-sectional area, $A = 90.25 \text{ ft}^2$

The maximum superficial velocity through the combustion chamber, V , $\text{ft}/\text{sec} = 31,152.89 \text{ ft}^3/\text{min} \times 1/90.25 \text{ ft}^2 \times \text{min}/60 \text{ sec} = 5.75 \text{ ft}/\text{sec}$

$R_e = DV\rho/\mu > 2300$ for turbulent flow condition

Where: D = combustion chamber diameter, $\text{ft} = 9.5$

V = gas velocity, $\text{ft}/\text{sec} = 5.75$

ρ = gas density, $\text{lb}/\text{ft}^3 = 0.0212$

μ = gas viscosity, $\text{lb}/\text{ft}\text{-sec} = 2.917 \times 10^{-5}$

R_e = Reynold's Number

$$R_e = 9.5(5.75)(0.0212)/(2.917 \times 10^{-5}) = 39,700.03 > 2,300$$

Therefore, the flow is turbulent.

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APPENDIX B: Fugitive Emission Calculation

FUGITIVE COMPONENTS COUNT FOR AMINE REGENERATION SYSTEM

Source Unit		Service	CE Factor (lbs/yr) (3)	No. of New Components To be Installed	Post -Mod Emissions (lbs/year)
Valves	Sealed Bellows	All	0	0	
	SCAQMD Approved I & M Program	Gas / Vapor	4.55	0	
		Light Liquid (1)	4.55	0	
		Heavy Liquid (2)	1.37	25	34.25
Pumps	Sealless Type	Light Liquid (1)	46.83	0	
	Double Mechanical Seals or Equivalent Seals	Light Liquid (1)	46.83	0	
		Heavy Liquid (2)	17.21	0	
Compressors		Gas/Vapor	9.09	0	
Flanges (ANSI 16.5-1988)		Gas/VaporLight Liquid (1)	6.99	0	
Flanges (ANSI 16.5-1988)		Heavy Liquid (2)	2.24	46	103.04
Connectors		Gas/VaporLight Liquid (1)	2.86	0	
Connectors		Heavy Liquid (2)	0.88	42	36.96
Pressure Relief Valves		All	0	1	
Process Drains with P-Trap or Seal Pot		All	9.09	0	
Other (including fittings, hatches, sight-glasses, and meters)		Gas/Vapor Light Liquid (1)	9.09	0	
Other (including fittings, hatches, sight-glasses, and meters)		Heavy Liquid (2)	3.23	2	6.46
Total Emissions (lbs/year)					180.71
Emissions (lbs/day)					0.50

- (1) Light liquid and gas/liquid streams: Liquid or gas/liquid stream with a vapor pressure greater than that of kerosene (>0.1 psia @ 100°F or 689 Pa @ 38°C), based on the most volatile class present at 20% by volume.
- (2) Heavy liquid: streams with a vapor pressure equal to or less than that of kerosene (<0.1 psia @ 100°F or 689 Pa @ 38°C), based on the most volatile class present at 20% by volume.
- (3) Emission factors derived from the Correlation Equation (CE) Method (AQMD's Guidelines for Fugitive Emissions Calculations, June 2003, Method 2, using 500 ppm for light liquid, 100 ppm for heavy liquid and 200 ppm for PRV for both light and heavy liquid.

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APPENDIX C: Risk Assessment

TIER 1 SCREENING EMISSION LEVELS FOR THE AMINE REGENERATION UNIT

The Multiple Pollutant Screening Level Procedure of Tier 1 is used to determine whether or not detailed risk analysis will be required. The most conservative nearest worker and residential receptor location of 25 meters is used.

Screening for Carcinogenic and Chronic Compounds

<i>Toxic Air Contaminant (TAC)</i>	<i>Wt % (1)</i>	<i>VOC Increase/yr (2)</i>	<i>Qyear (3)</i>	<i>PSL (4)</i>	<i>PSI (5)</i>	<i>Result</i>
Hydrogen Sulfide	2.64E-00	1.79E+03	4.72E+01	3.31E+02	1.43E-01	Passed

- (1) Provided by Paramount, Vapor Speciation (included in the applicant's submittal)
- (2) See Table 5 of this report (lbs/day x 365 = lbs/yr)
- (3) Annual emissions of each TAC (Qyear), lbs/yr (wt% x lbs/yr)
- (4) Pollutant Screening Level (PSL), the nearest worker and residential receptor location of 25 meters is used as contained in Table 1A of Attachment L, Risk Assessment Procedures, Version 7.0, (Revised December 7, 2012)
- (5) Pollutant Screening Index (PSI) = Q/PSL

Screening for Acute Compounds

<i>Toxic Air Contaminant (TAC)</i>	<i>Wt % (1)</i>	<i>VOC Emissions/hr (2)</i>	<i>Qhour (3)</i>	<i>PSL (4)</i>	<i>PSI (5)</i>	<i>Result</i>
Hydrogen Sulfide	2.64E-00	2.04E-01	5.39E-03	2.1E-02	2.57E-01	Passed

- (1) Provided by Paramount, Vapor Speciation (included in the applicant's submittal)
- (2) See Table 5 of this report (lbs/day ÷ 24 = lbs/hr)
- (3) Total hourly emissions of each TAC (Qhour), lbs/hr (wt% x lbs/hr)
- (4) Pollutant Screening Level (PSL), the nearest worker and residential receptor location of 25 meters is used as contained in Table 1A of Attachment L, Risk Assessment Procedures, Version 7.0, (Revised December 7, 2012)
- (5) Pollutant Screening Index = Q/PSL

Both the cumulative cancer/chronic risk and cumulative acute risk are well below 1; therefore no further risk screening assessment is required.